FIG. 1

A flow chart of producing water containing fullerences

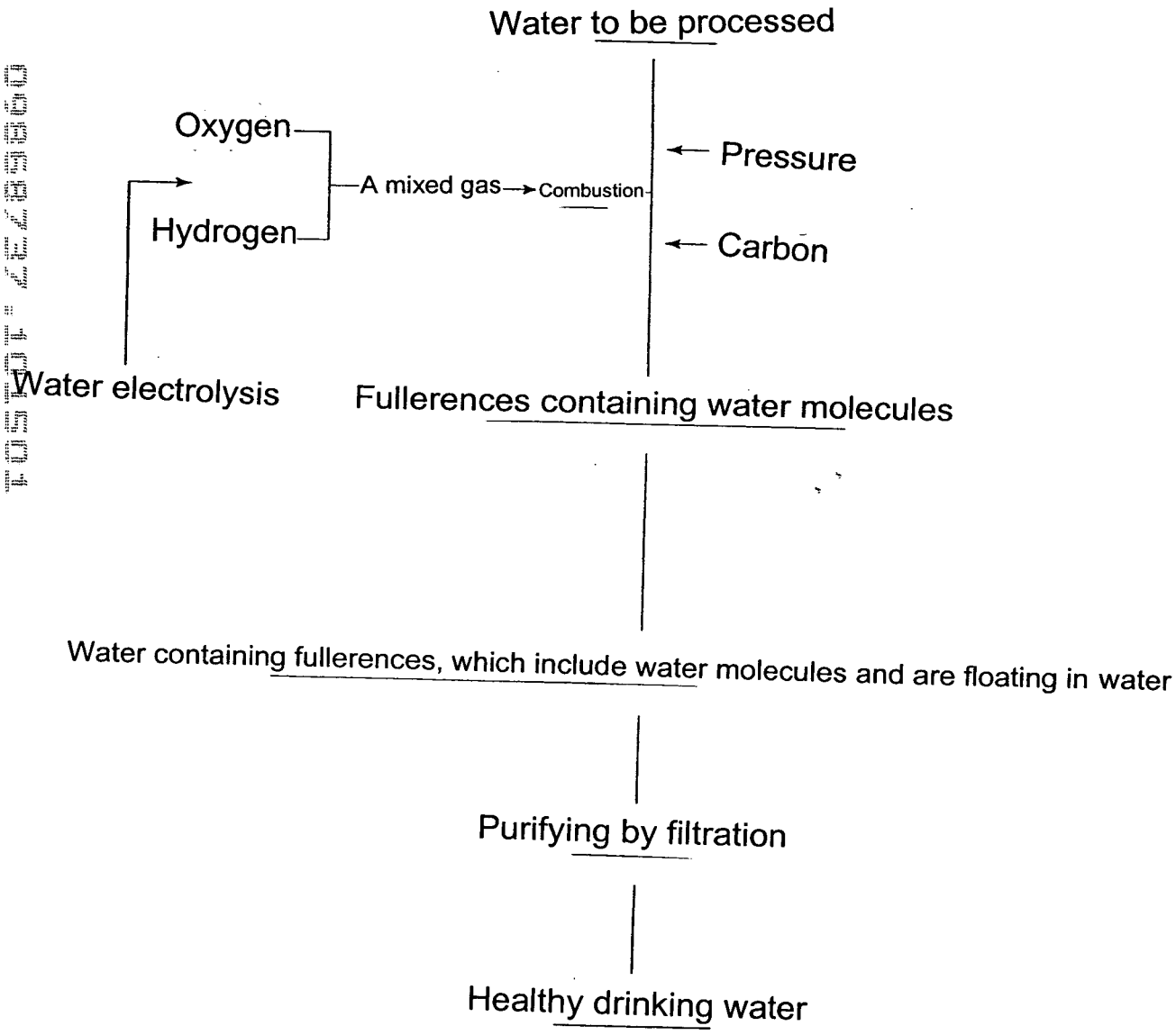

FIG. 2

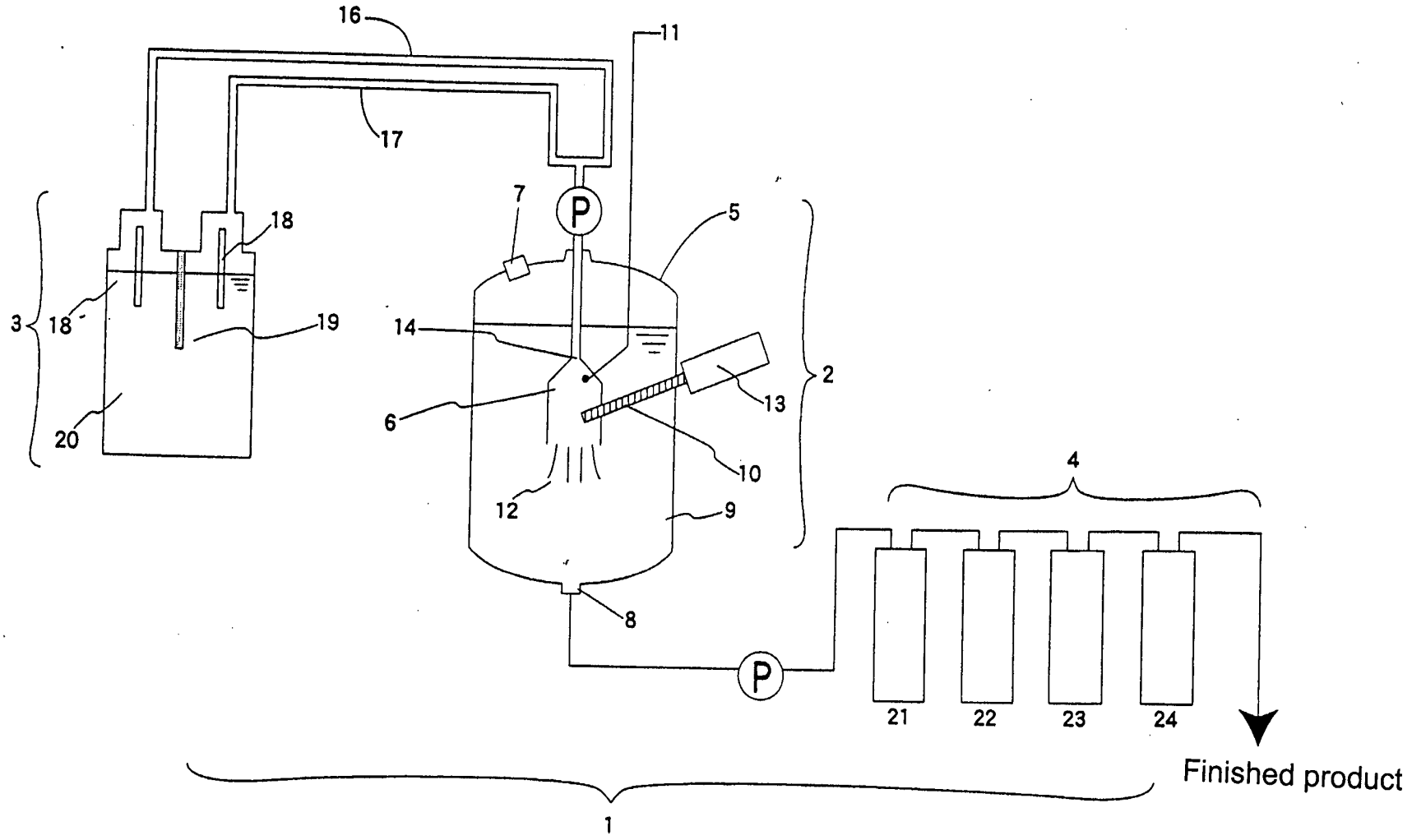

FIG. 3

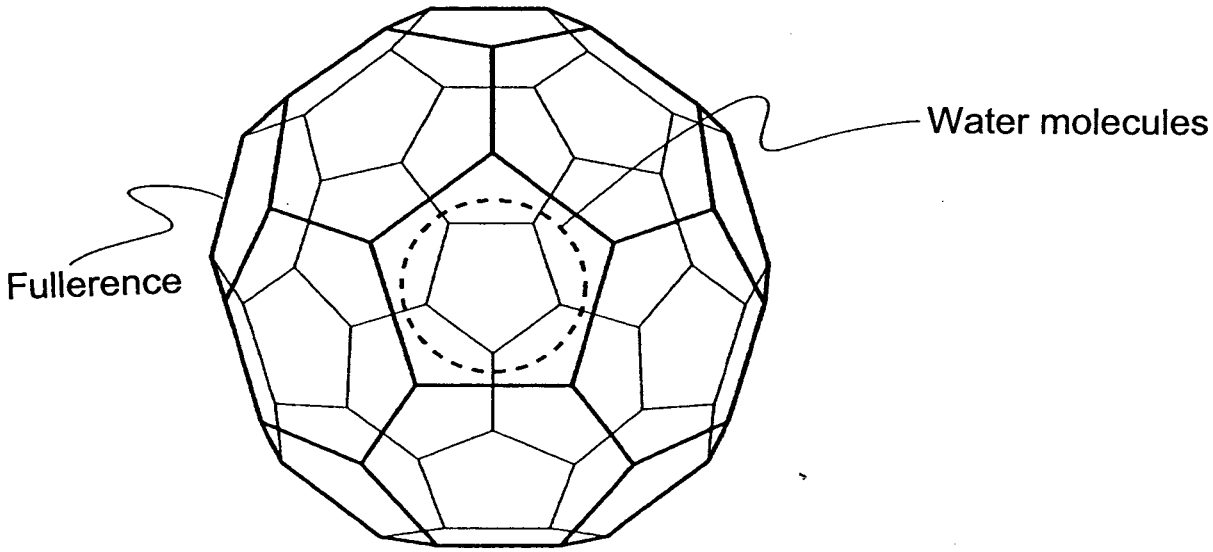

FIG. 4

Various Properties of C_{60} (prepared based on a table from Chemistry, 46, 830, 1990)

Properties (Physical Quantity)	Measured Value, etc.
·Molecular weight:	720.66
·No. of molecules:	720
·Molecular structure:	Frustum icosahedron (1_n), Diameter: ~7.1A C-C bond shared by two six-membered rings 1.391A C-C bond forming a five-membered ring 1.455A
·^{13}C-NMR spectrum (C_4D_6	δ = 143.27ppm
·Infrared adsorption spectrum (KBr pellet)/cm^{-1}	527.4, 576.4, 1182.4, 1428.5
·Infrared emission spectrum (vapor-phase, 850±100°C)/cm^{-1}	527.1, 570.3, 1169.1, 1406.9
·Raman spectrum (thin film)/cm^{-1}	273(s), 437(m), 496(s), 710(m), 774(m), 1099(w), 1250(w), 1428(m), 1470(vs), 1575(m)
·Visible ultraviolet spectrum (hexane solution, log ε in parentheses)/nm:	211(5.11), 227(sh,4.91), 256(5.24), 328(4.71), 390(3.52), 403(3.48), 492(sh,2.72), 540(2.85),568(2.78), 590(2.86), 598(2.87), 620(2.60)
·Fluorescence spectrum (toluene solution, at room temp.)/nm	No observation (thin film, 20K), 706.7(main), 787.4, 877(sh)
·Triplet energy (toluene solution)	1.56±0.03 eV (8.60±0.14 kJ/mol)
·Ionization potential	7.61±0.02 eV
·Electron affinity:	2.65±0.02 eV
·Reduction potential ($E^{1/2}$ vs Fc/Fc^+), acetonitrile/toluene, (Et_4N) BF(illegible), -10°C:	-0.98, -1.37, -1.87, -2.35, -2.85, -3.26 (V)
·Crystal structure:	Simple cubic system (249K or less) Pα3, Z=4, a=14.041χ (5K) Face-centered cubic system (249K or more) *Fm* 3, Z=4, a=14.17±0.01χ (300K) Distance between the center of adjacent molecules: ~10.0χ
·Density:	1.729 g/cm^{-9} (5K, calculated value) 1.682 g/cm^{-9} (300K, calculated value)
·Compressibility (0~20GPa):	(5.5±0.5)x10^{-2}GPa^{-1}
·Melting point:	>700°C
·Heat of transition (249K):	~4.83kJ/mol
·heat of sublimation:	9.58±0.31 kJ/mol
·Conductivity (at room temp.):	<10.$^{-9}$Scm^{-1}
·Molar magnetic susceptibility	—(260±20)x10^{-6}emu/mol
·Transition temp. of superconducting salt Tc/K:	K_3C_{60}(18), Rb_3C_{60}(28,30), Rb_2CsC_{60}(31), $RbCs_2C_{60}$(33), K_2CsC_{60}(24), Na_2CsC_{60}(12), Na_2RbC_{60}(s.5), Na_2KC_{60}(2.5), Li_2CsC_{60}(12), Ca_xC_{60}(8.4), Sn_xC_{60}(12)
·Curie temp. of ferromagnetic salt:	$TDAE_{0.55}C_{60}$ 16.1K

* Curie temperature: Temperature at which a paramagnetic substance changes to a ferromagnetic substance when it is cooling down.
TDAE indicates tetrakis(dimethyllamino)ethylene.

(Source: K. Tanigaki & others, *Fullerence*, Sangyo-tosho, Oct. 27, 1992, P.16)